

RESEARCH

Collaborative Tool and Multipoint Videoconferencing System

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July 26th, 2002



David Collados

- **Description of the System**
- **Access Grid Integration**
- **VRVS Statistics**
- **Next Release: VRVS 3.0**
- **Conclusion**

What is VRVS ?

- Web oriented system developed by Caltech and funded by the DoE to provide a collaborative environment for the HEP community.
- A pure **software** service for **multipoint videoconferences over IP networks**.
- **Multi-platform** collaborative tool: Windows, Linux, Solaris, Irix and Mac.
- Solution that includes:
 - ▶ An intuitive Web Interface.
 - ▶ A network of Interconnected Reflectors.



Easy to use from anywhere



Join your colleagues in few steps

1. Go to **www.vrvs.org** with your web browser.
2. Register yourself (if you are not already).
3. Download the VRVS package (optional).
4. Click on **JOIN** and select a Virtual Room.
5. Click on the icons to launch and connect your audio/video client.

You are connected!

VRVS keeps your settings for the next time



VRVS is an Open System



- Support of **Different Clients**:
 - ▶ **VIC / RAT** (MBone freeware applications).
 - ▶ **H.323 Software** clients: NetMeeting, VideoLink Pro...
 - ▶ **Internal Hardware H.323** clients: Zydacron OnWan.
 - ▶ **External Hardware H.323** clients: PolyCom ViewStation, ViaVideo. Tandberg 1000, etc.)
 - ▶ **QuickTime** Player.
 - ▶ Java Media Framework (**JMF**).
- Plus **extra services/features**:
 - ▶ Applications and Desktop **Sharing** integrated.
 - ▶ **Chat** that pops-up URLs (cobrowsing)
 - ▶ **Multi Time Zones Booking System**.

Virtual Room and
Meeting name

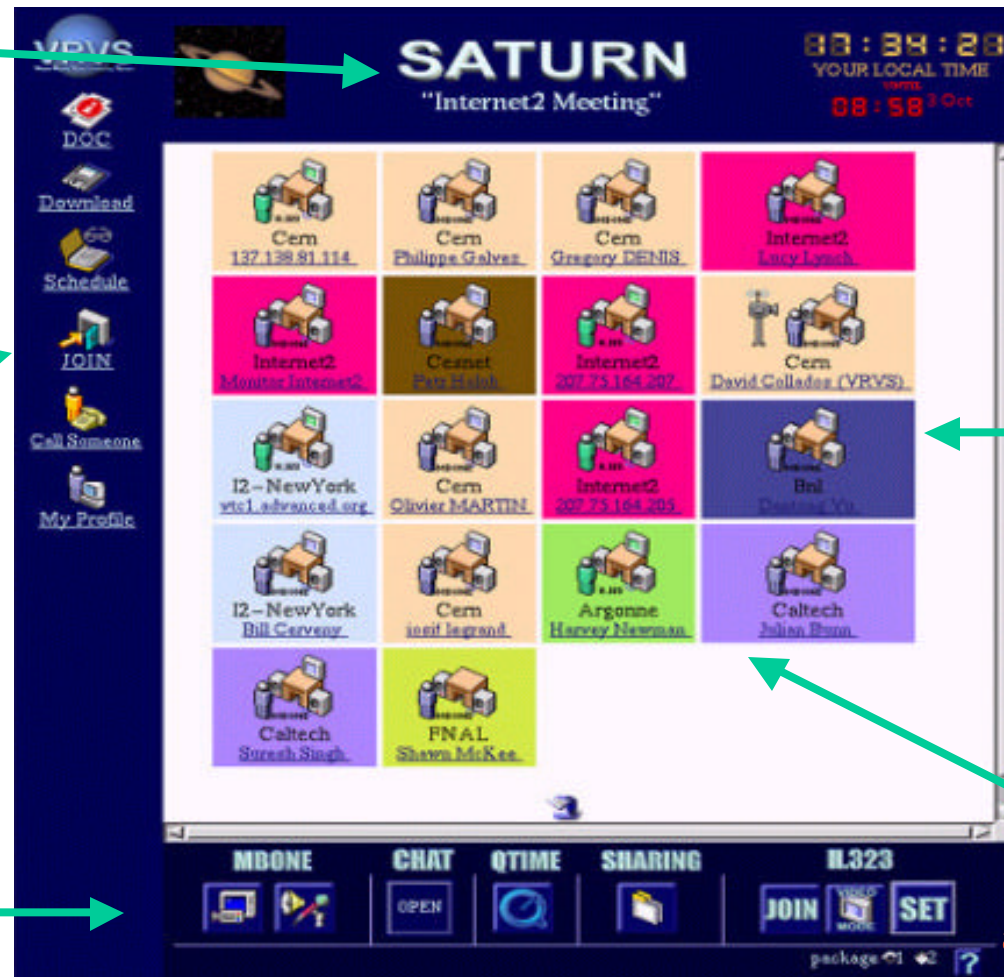
International
time zone
adjusted

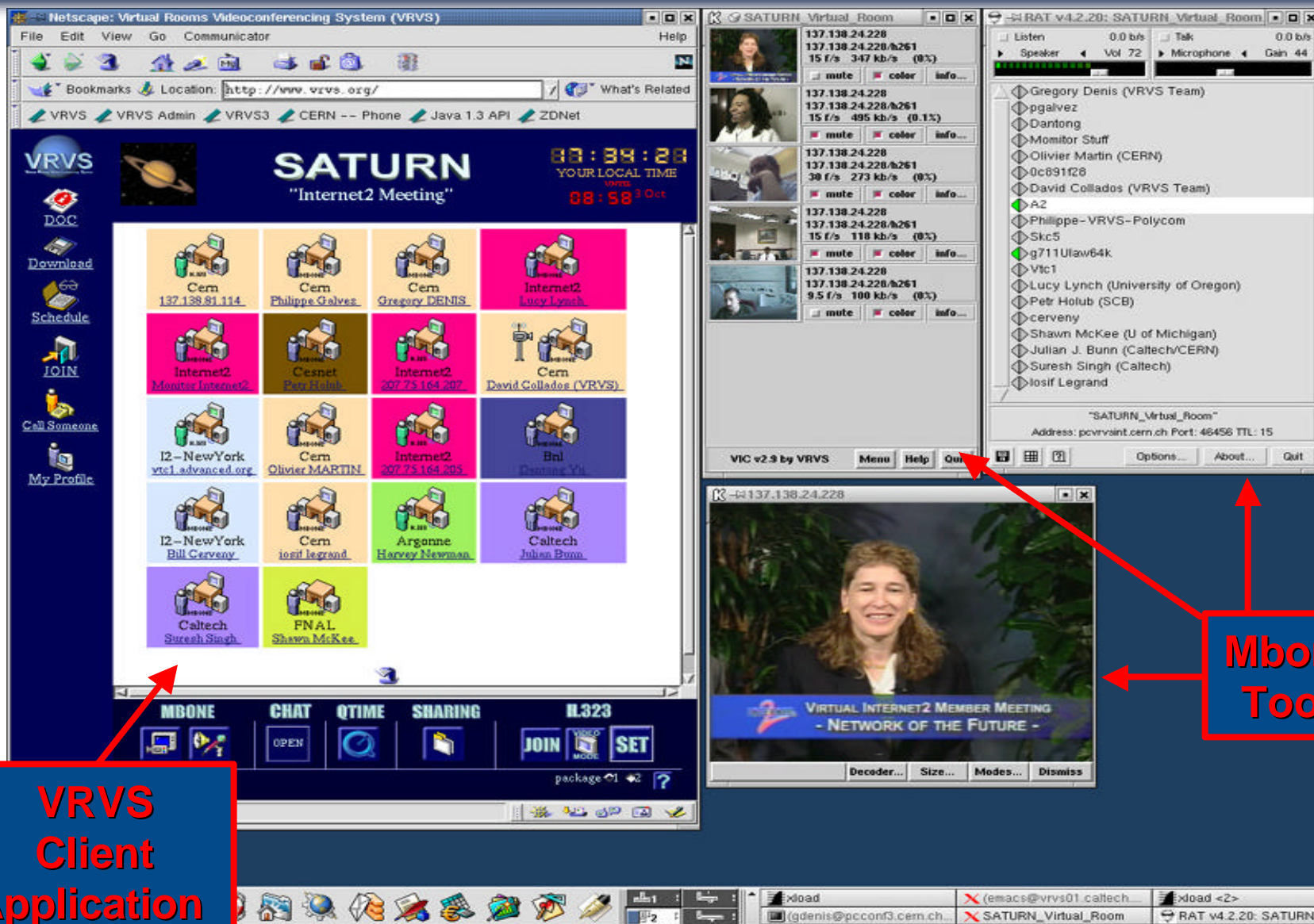
Direct access
to set-up
facilities

List of all
currently
connected
participants

SELECT:
MBone, Chat,
QuickTime,
Sharing, H.323

In 1 shot you
know where
the participants
are and the facilities
they are using



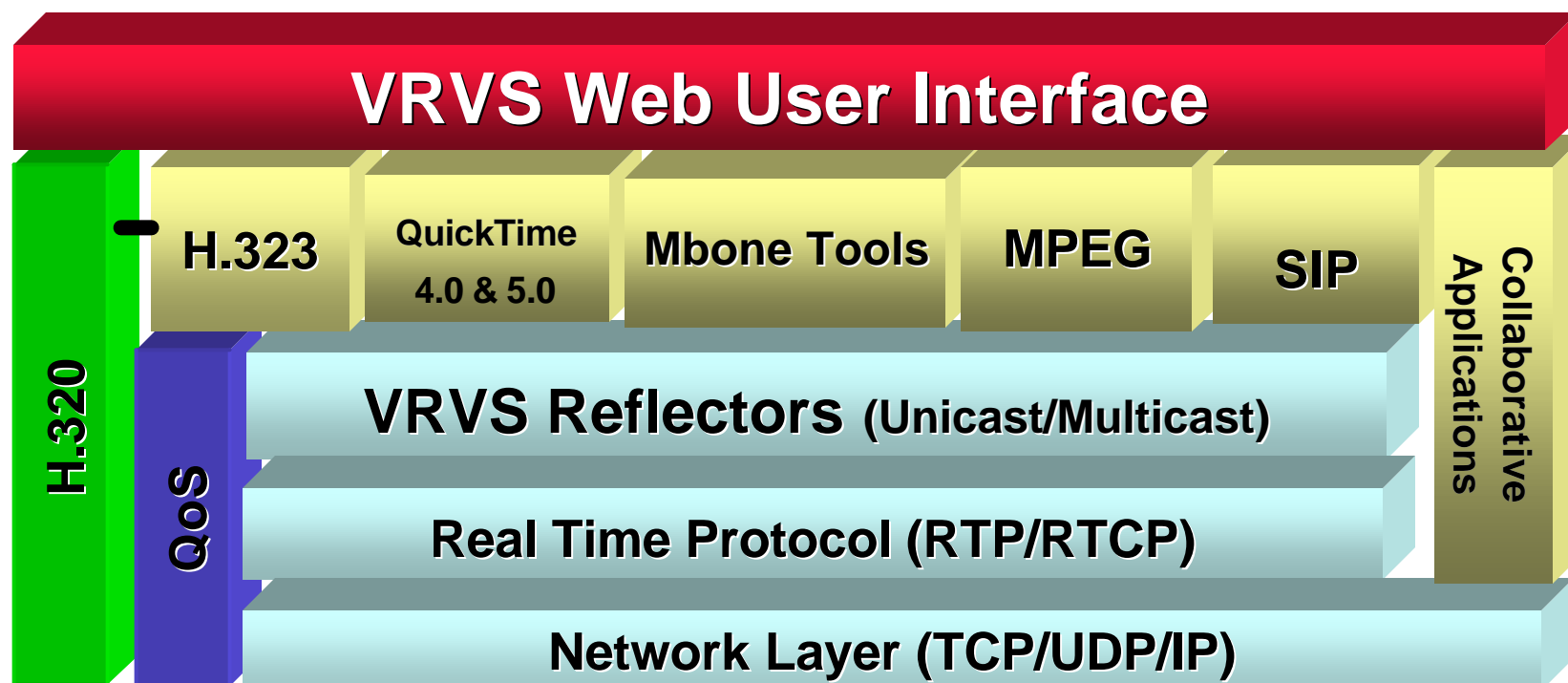


The screenshot displays the VRVS client application running in a Netscape browser window. The main interface is titled "SATURN 'Internet2 Meeting'" and shows a grid of participant icons with names and IP addresses. A sidebar on the left contains navigation links like "DOC", "Download", "Schedule", "JOIN", "Call Someone", and "My Profile". A bottom toolbar includes buttons for "MBONE", "CHAT", "QTIME", "SHARING", "IL323", "JOIN", "SET", and "package". On the right, a "SATURN Virtual Room" window shows a list of attendees and a video feed of a speaker. A red box labeled "Mbone Tools" points to the "MBONE" button and the video feed window.

**VRVS
Client
Application**

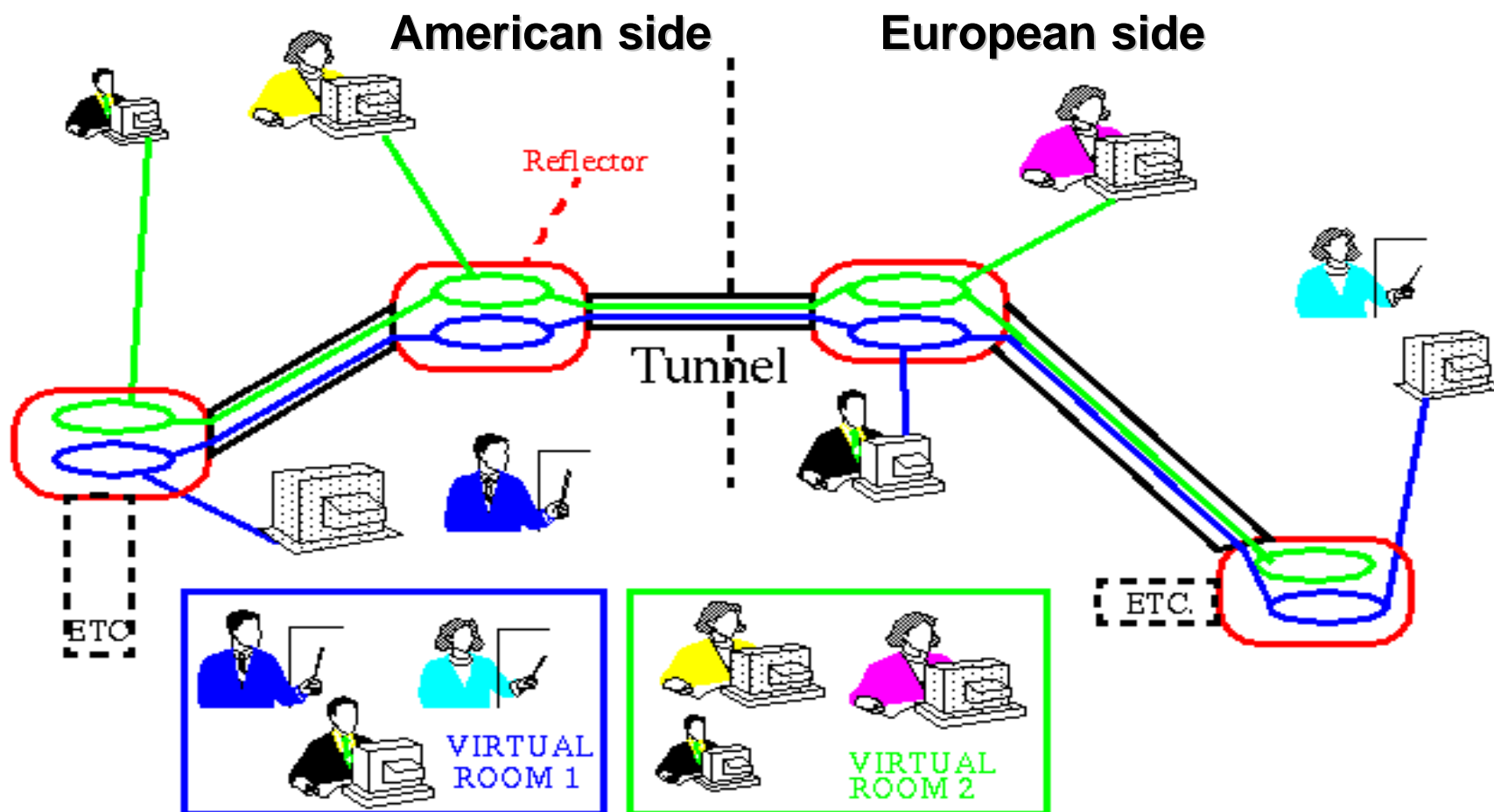
**Mbone
Tools**

Multi-Platform and Multi-Protocol Architecture



Virtual Rooms Concept

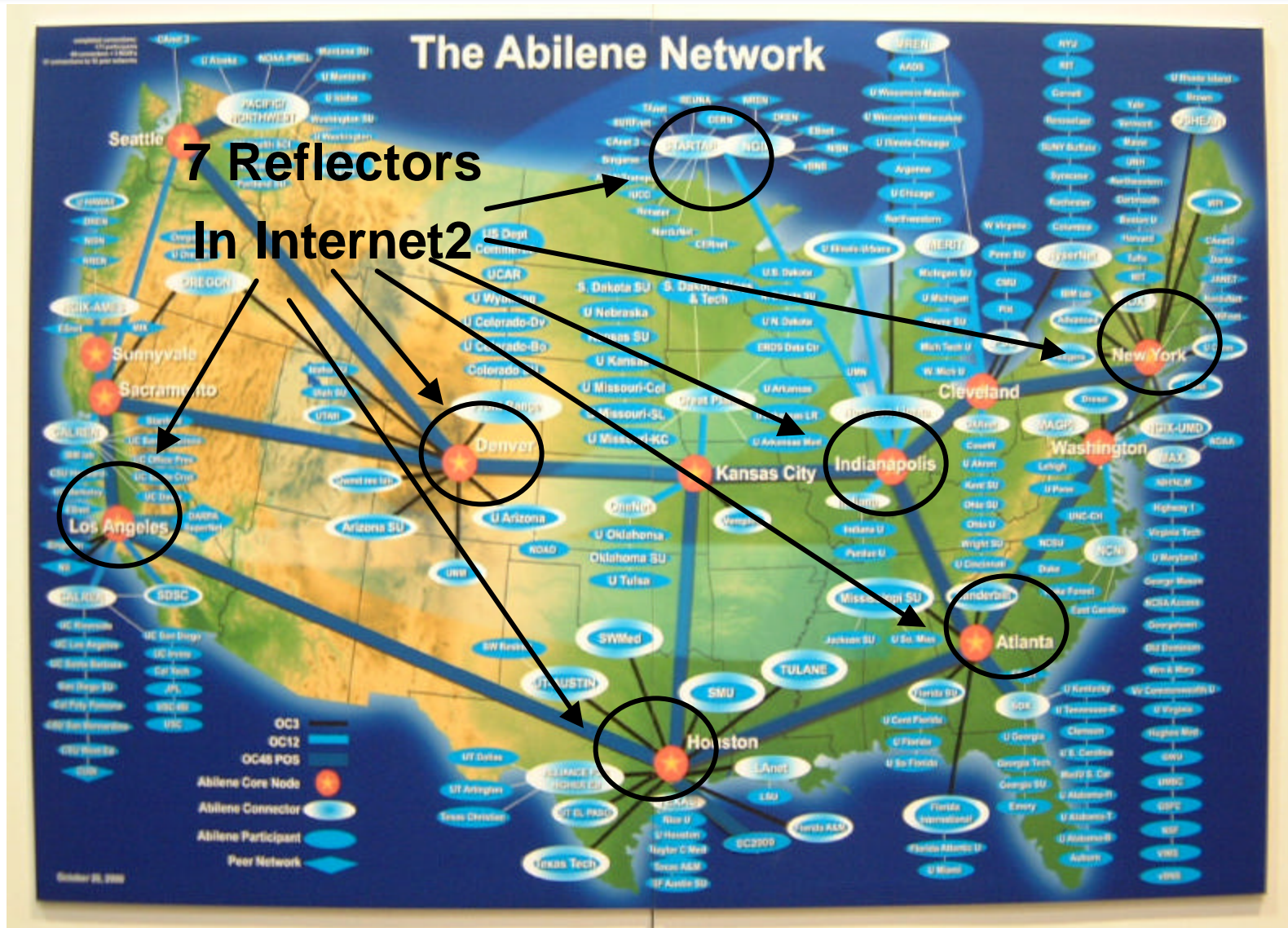
Enter a Virtual Room Through Your Nearest Reflector





44 Reflectors world wide: US (ANL, BNL, California(4), FNAL, Florida(4), Internet2(7), JLAB, SLAC), Brazil(3), Canada(2), Czech Republic, Spain(2), Finland, Israel(2), Italy, Japan, Poland, Portugal (2), Romania, Russia, Slovakia, Switzerland (2), Taiwan, U.K (3)... and growing...

Internet2 deployment



July 26th, 2002

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Access Grid Integration

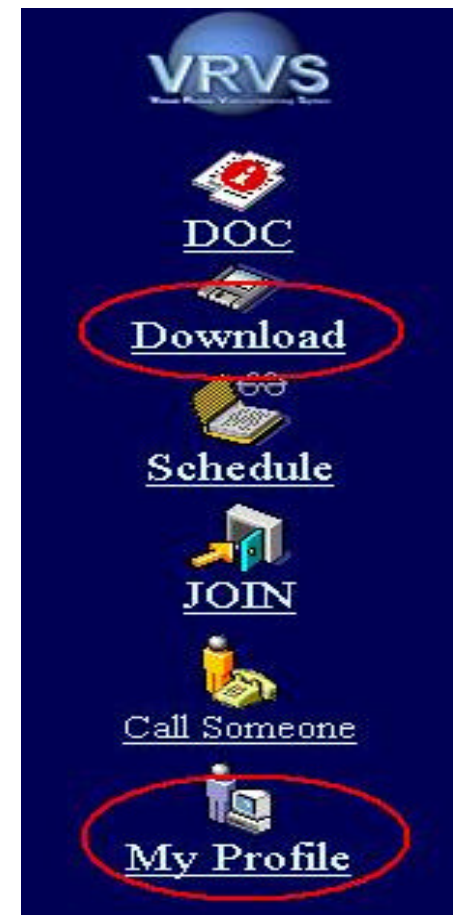


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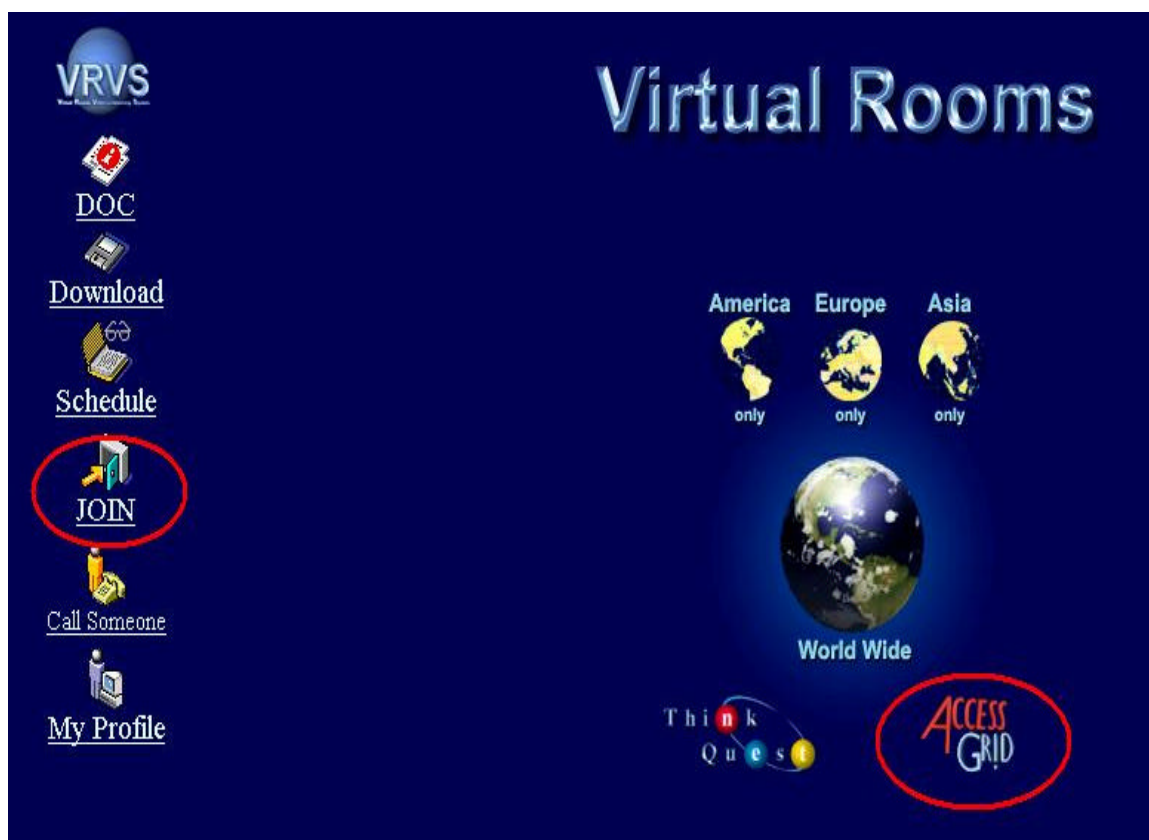
- Connect to AG Virtual Venues through VRVS.

Using MBone Tools (VIC/RAT):

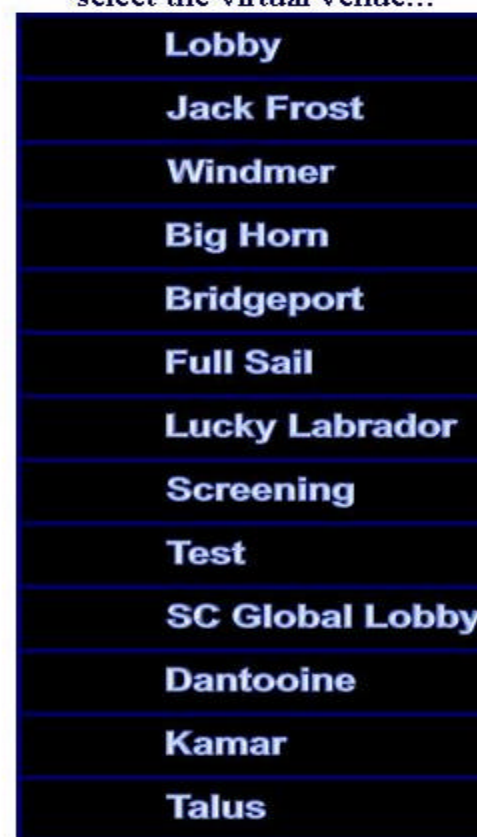
1. Go to www.vrvs.org.
2. Click on “Register Me” (if it is the first time you use VRVS)
3. “Download” the VRVS Package (including the MBone tools) if you don’t have them already.



Select the desired Virtual Venue



select the virtual venue...

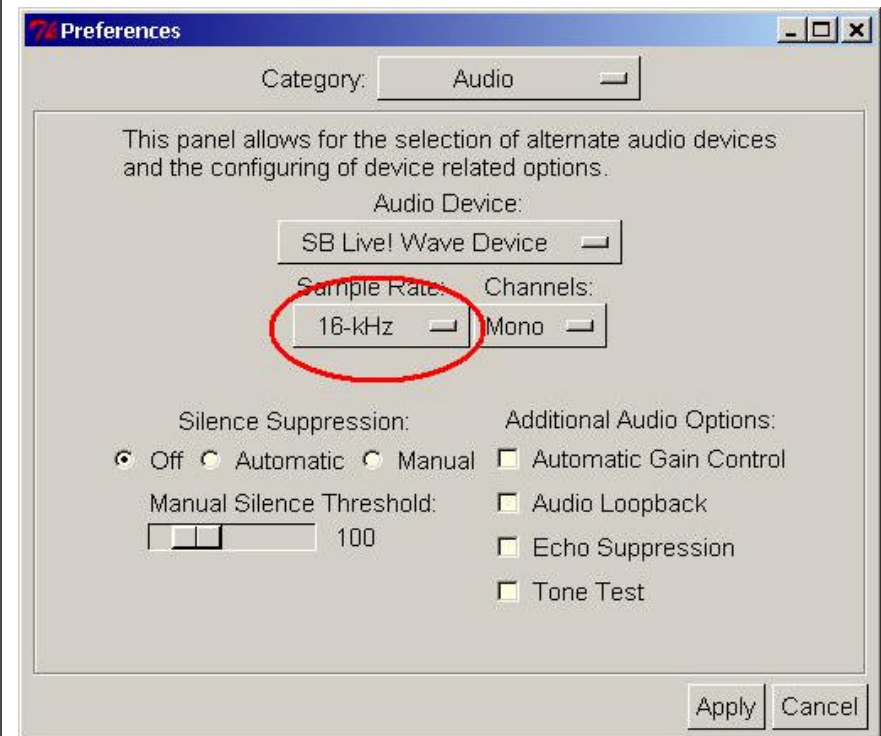
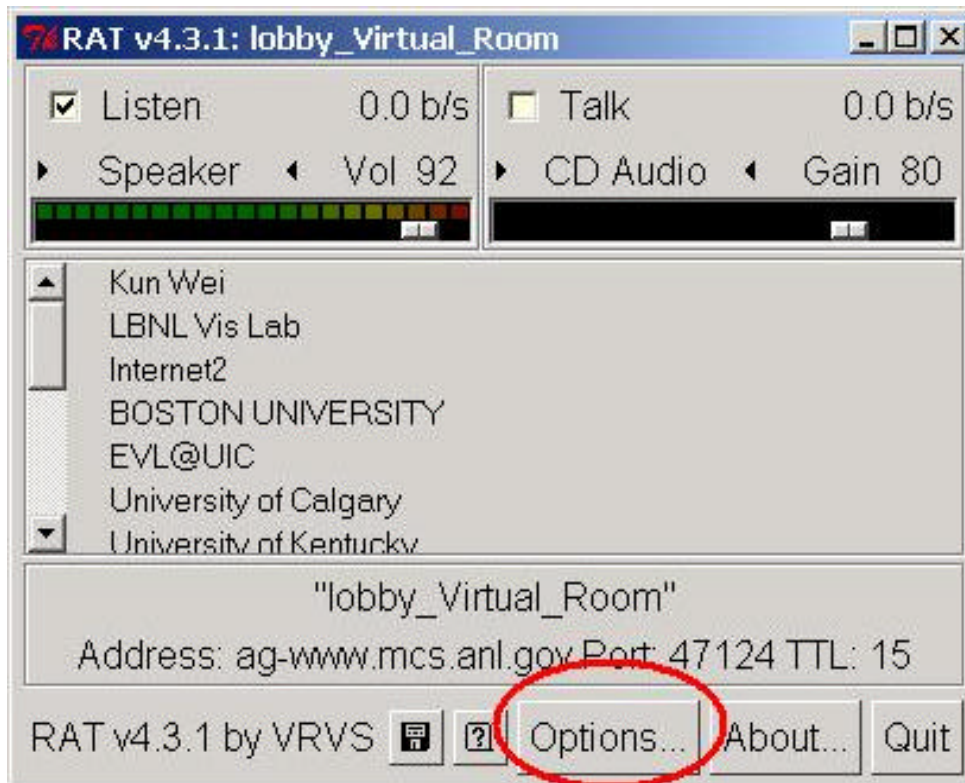


Now you are in a Virtual Venue.

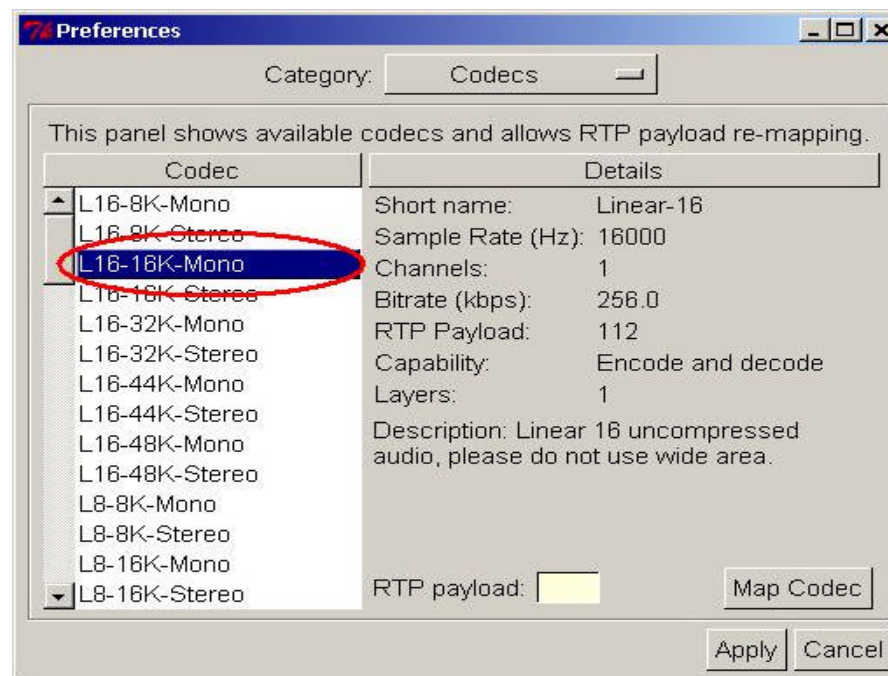
Click on the “Audio” button to launch the MBone Audio tool – RAT.



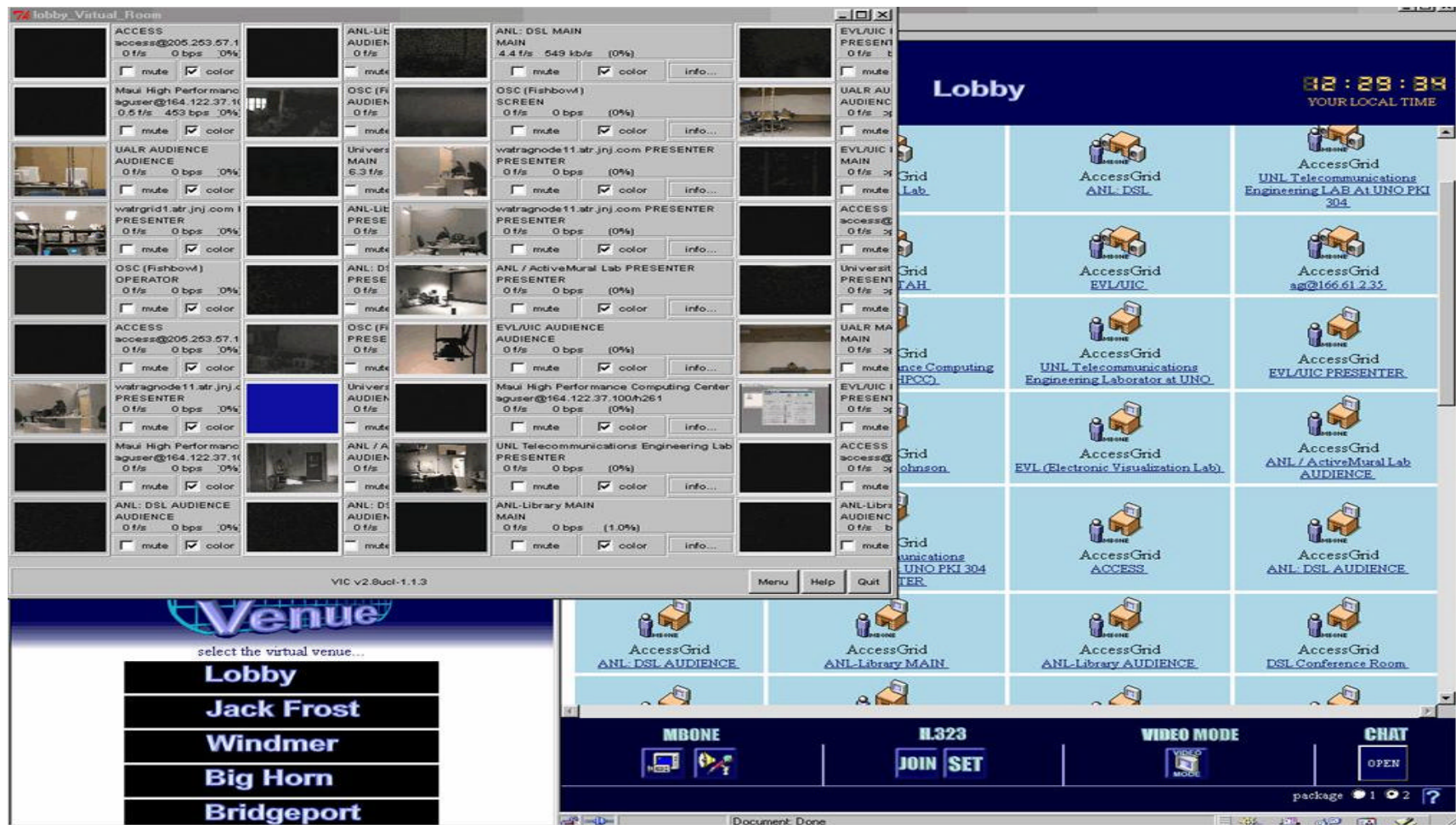
Check that you are using the right audio options.



Select Category “Codecs”.
Select “L16-16K-Mono” Codec.



Launch VIC to send/receive the video.



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Connect using H.323 Devices:

Click on the H.323 “SET” button.

Fill the parameters including your hostname/IP, bandwidth and frame rate.

“SAVE” it and click on “JOIN” H.323 button.

After a few seconds, your H.323 client will receive a call from the VRVS agent. Accept it.



A screenshot of a web browser window titled 'H.323 Setup - Microsoft Internet Explorer'. The main heading is 'H.323 via VRVS'. Below it, under the 'Client' section, are several input fields and controls:

- Hostname/IP or Alias: 131.215.126.192
- Gatekeeper (if alias): nogatekeeper
- max Bandwidth: 768 Kb/s (dropdown menu)
- max Frames/Seconde: 25/30 PAL/NTSC (dropdown menu)
- audio only: ☐

At the bottom are three buttons: CANCEL, HELP, and SAVE.

Now you are connected with an H.323 device.

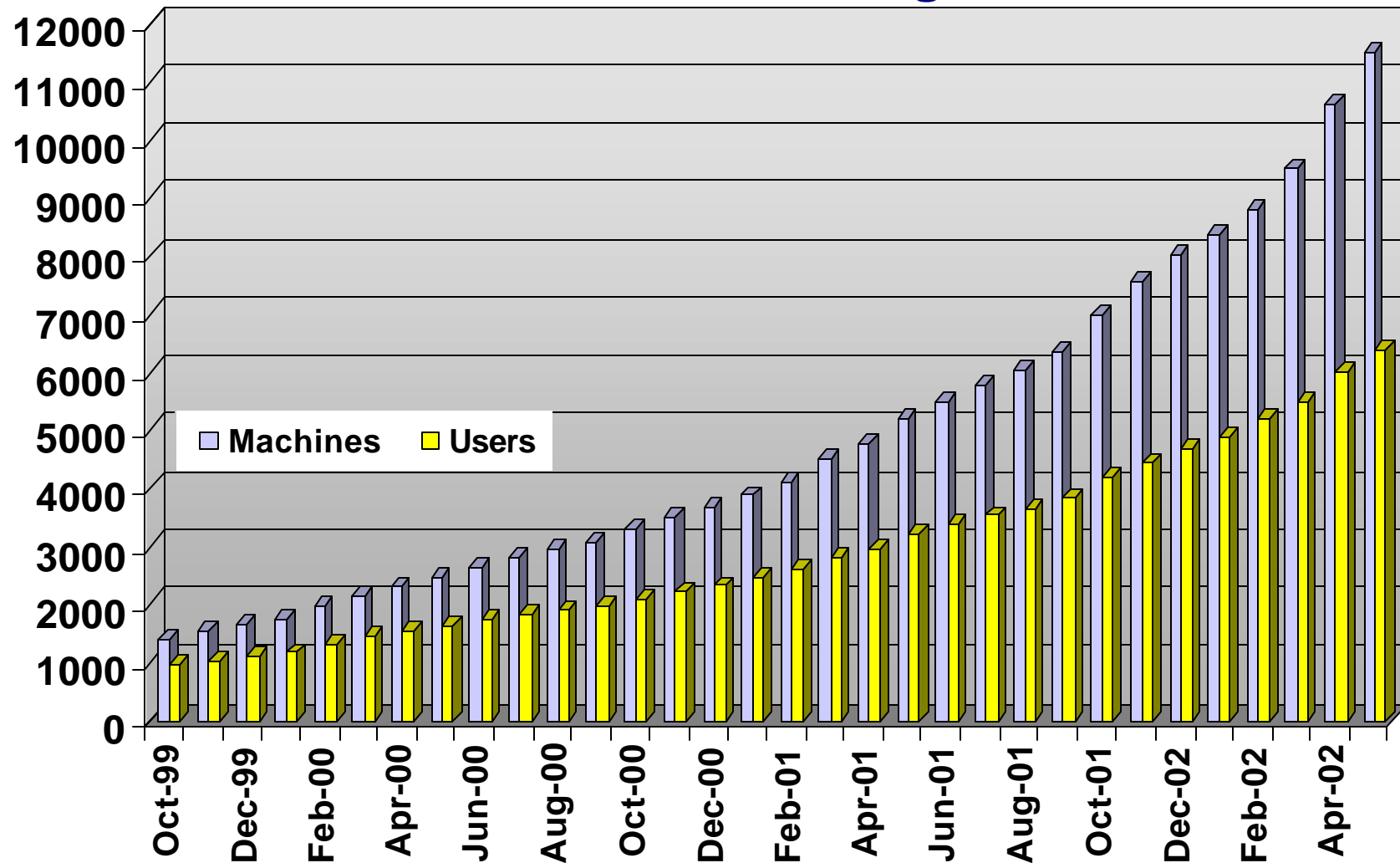


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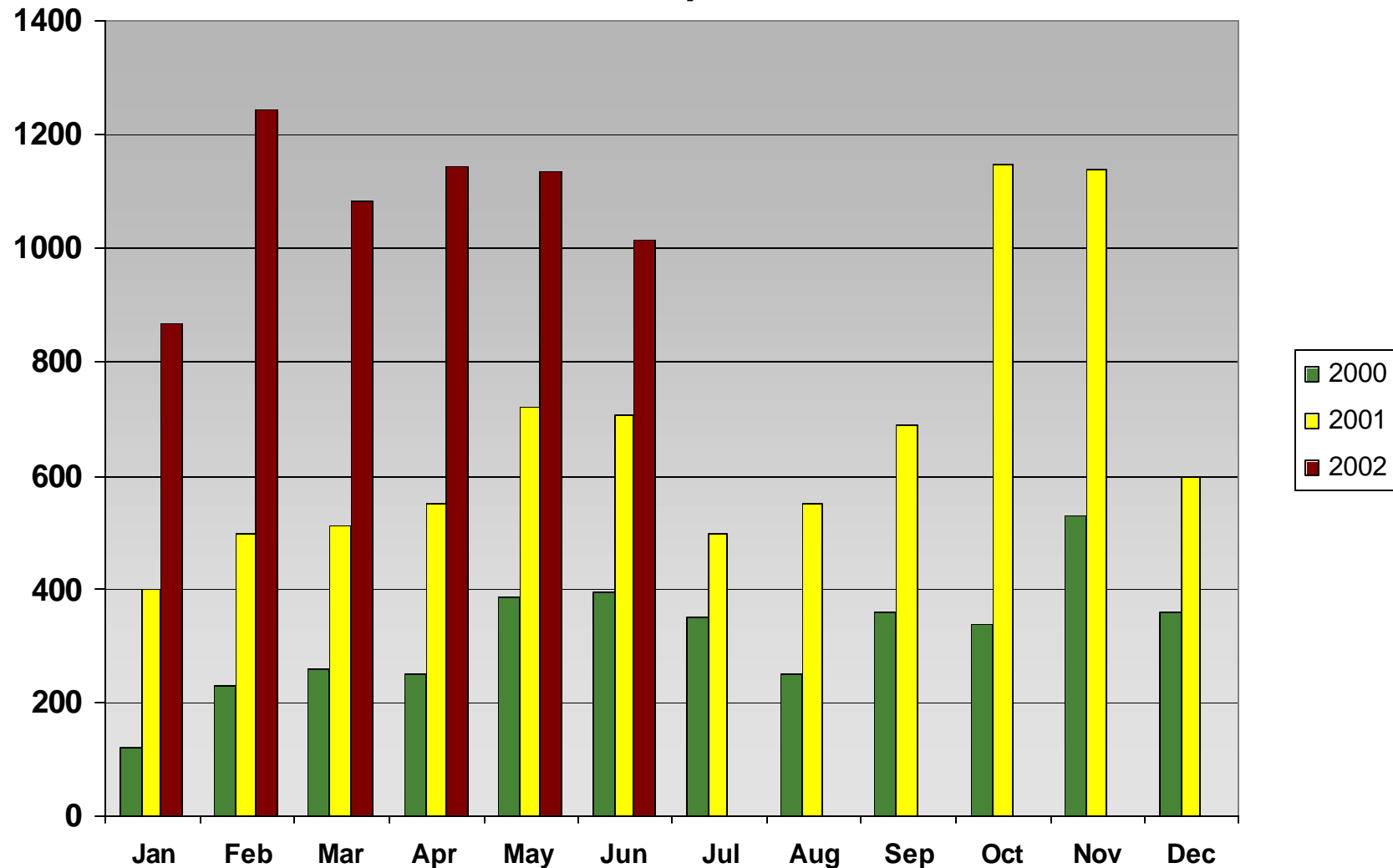
- More than **11500 machines** and **6400** different **users** in **61** countries are registered in the system.
- During the year 2001, **2700 Multipoint** Conferences were performed (8000 Hours).
- More than **3000 point to point** connections were established.
- Since October 2001: **300 Multipoint sessions (1000 hours) per Month**

Average of 5 to 10 participants per videoconference session (with range from 2 to 40 participants).

Machines and Users registered



Hours of Scheduled Multipoint Videoconferences



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To face our success and the growing demand, we decided to improve the performance and flexibility of our main server.

- **Faster Access** to the pages.
- **User Authentication.**
- **Monitoring and Tracking tools.**
- **Handle several communities** and hundreds of **Virtual Rooms.**

- Move to a professional **Database Engine**.
- Rewriting the code to **improve performance**.
- A new **Reflectors** release:
 - ▶ Better design to accommodate H.323 clients.
 - ▶ Do **packet recovery**
 - ▶ **Aggregate bandwidth dynamically** for H.323 multipoint conferences between end points to an overall maximum conference bandwidth.
 - ▶ **Fix incompatibilities** among several H.323 end points.
 - ▶ **Mute/Unmute** video or/and audio **remotely**.

- New **Administration Interfaces**.
- **Support** all International **Time Zones** (including summer time).
- Redesign of the **user interface** to accommodate **several communities** and navigation through hundreds of Virtual Rooms.
- **Authentication and Encryption**.
- The user profile follows you to any computer in the world.



Community
Globe

Virtual Room
ALL

Time Zone
GMT 2 summer

Documentation
Download
Booking
ENTER
CALL
Profile
LOGOUT

dcollado
[pcmed10](#)


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Community
Globe


Country
Switzerland



Time Zone
GMT +2 summer


Booking
Quota: 48 slots left 0 (used) 48 (maximum)

MODIFY
HELP
CLOSE


- Date/Time shown in the selected time zone
- Quota management.
- Locking system.
- Mailing list feature to notify the participants about the creation, modification or cancellation of a booking.
- Selection among different bandwidth ranges.
- Copy/Move bookings is now possible.

Booking (copy & move)



Community

Globe



Virtual Room

World / Saturn

Time Zone

GMT 2 summer Paris

Documentation

Download

Booking

ENTER

CALL

Profile


LOGOUT

Saturn

YEAR MONTH DAY


your appointment

"New Booking Demonstration"

 **Time Change:**

☐ change the beginning

☐ change the end

 **Date Change:**

☐ move to another date

☐ copy to another date

HELP CANCEL PROCEED

Booking (Monthly View)



Community
Globe


Virtual Room
World / Mars

Time Zone
GMT 2 summer Paris

Documentation
Download
Booking
ENTER
CALL
Profile
LOGOUT

Mars
YEAR MONTH DAY

May 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 GLAST so	3 SC2	4 Saturday
5	6 ATLAS DC	7 EFDA-JET ECAL TCG	8 CMS ECAL	9 GLAST so	10	11
12	13 ATLAS DC	14 EFDA-JET ECAL TCG	15 CMS REFE	16 GLAST so	17	18
19	20 ATLAS DC	21 EFDA-JET ECAL TCG	22 ECAL REV	23 GLAST so	24	25
26	27 ATLAS DC	28 EFDA-JET ECAL TCG	29	30 GLAST so	31	

previous
need help?
next

Use the *previous*, *next*, *YEAR*, *MONTH* and *DAY* buttons to browse the schedule...
...instead of the 'Back' and 'Forward' buttons of your web browser.

Booking (Specific Day View)



Community
Globe

Virtual Room
ALL

Time Zone
GMT -2 summer Paris

Documentation
Download
Booking
ENTER
CALL
Profile
LOGOUT

← Tuesday, May 14, 2002 →

change

Virtual Room	Start	End	Subject	Options
 Whitehouse	11:30	11:58	03:30 Denver	
 Venice	22:00	23:58	vhbrm	
 Mars	09:30	12:58	EFDA-JET Task Force S1 Meeting	6
	15:30	18:58	ECAL TCG	6
 Moon	09:00	19:28	CMS REFEREES	
 Neptune	14:30	15:58	ECAL ELECTRONICS	
 Saturn	10:30	17:58	ALICE TECHNICAL BOARD	
 Sun	15:30	18:28	PRS Tracker b tau	
 Venus	14:00	15:58	CMS TK/MANNELLI	

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Conclusion



- VRVS is a **Worldwide** Videoconferencing **Service** in production **since 5 years ago**.
- **Version 3.0** will be released this summer to face the demand and **improve the system**.
- Our team works to **integrate all emerging technologies** into only one system.
- As **easy to use** as possible.
- Try it at: **WWW.VRVS.ORG**

WWW.VRVS.ORG

Questions?

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